

What is claimed is:

1        1.        A method comprising:

2                making a first determination, based on first feedback generated during execution of a  
3                program, the first determination to indicate whether the size of a compiled code cache should  
4                be modified;

5                making a second determination, based on second feedback generated during execution of  
6                the program, the second determination to indicate whether the size of a heap should be  
7                modified; and

8                modifying a shared storage region based on the first determination and the second  
9                determination.

1        2.        The method of claim 1, wherein modifying the shared storage region based on the  
2                first determination and the second determination further comprises:

1                increasing the size of the shared storage region if:

2                the first determination indicates that the size of the compiled code cache should be  
3                increased; and

4                the second determination indicates that the size of the heap should be increased.

1        3.        The method of claim 1, wherein modifying the shared storage region based on the  
2                first determination and the second determination further comprises:

1                decreasing the size of the shared storage region if:

2                   the first determination indicates that the size of the compiled code cache should be  
3                   decreased; and

4                   the second determination indicates that the size of the heap should be decreased.

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1           4.        The method of claim 1, wherein modifying the shared storage region based on the  
2           first and second determinations further comprises:

3                   if the second determination indicates that the size of the heap should be increased,  
4                   modifying allocation of the shared storage region to increase the size of the heap.

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1           5.        The method of claim 4, wherein modifying the shared storage region based on the  
2           first and second determinations further comprises:

3                   if the second determination indicates that the size of the heap should be increased,  
4                   modifying allocation of the shared storage region to decrease the size of the compiled code  
5                   cache.

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1           6.        The method of claim 1, wherein modifying the shared storage region based on the  
2           first and second determinations further comprises:

3                   modifying allocation of the shared storage region to increase the size of the heap if:

4                   the second determination indicates that the size of the heap should be increased;  
5                   and

7 a growth need for the heap has existed for at least a predetermined time interval.

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2 7. The method of claim 1, wherein modifying the shared storage region based on the  
first and second determinations further comprises:

3 if the first determination indicates that the size of the compiled code cache should be  
4 increased, modifying allocation of the shared storage region to increase the size of the  
5 compiled code cache.

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2 8. The method of claim 7, wherein modifying the shared storage region based on the  
first and second determinations further comprises:

3 if the first determination indicates that the size of the compiled code cache should be  
4 increased, modifying allocation of the shared storage region to decrease the size of the heap.

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2 9. The method of claim 1, wherein modifying the shared storage region based on the  
first and second determinations further comprises:

3 if the second determination indicates that the size of the heap should be decreased,  
4 modifying allocation of the shared storage region to decrease the size of the heap.

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2 10. The method of claim 9, wherein modifying the shared storage region based on the  
first and second determinations further comprises:

3 if the second determination indicates that the size of the heap should be decreased,  
4 modifying allocation of the shared storage region to increase the size of the compiled code  
5 cache.

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1 11. The method of claim 1, wherein modifying the shared storage region based on the  
2 first and second determinations further comprises:

3 modifying allocation of the shared storage region to increase the size of the compiled  
4 code cache if:

5 the first determination indicates that the size of the compiled code cache should  
6 be increased; and

7 a growth need for the compiled code cache has existed for at least a  
8 predetermined time interval.

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1 12. The method of claim 1, wherein modifying the shared storage region based on the  
2 first and second determinations further comprises:

3 if the first determination indicates that the size of the compiled code cache should be  
4 decreased, modifying allocation of the shared storage region to decrease the size of the  
5 compiled code cache.

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1 13. The method of claim 12, wherein modifying the shared storage region based on  
2 the first and second determinations further comprises:

3           if the first determination indicates that the size of the compiled code cache should be  
4           decreased, modifying allocation of the shared storage region to increase the size of the heap.

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1           14.       The method of claim 1, wherein:

2           the first feedback includes a code increase indicator to indicate whether the amount of  
3           compiled code in the compiled code cache has increased during execution of the program.

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1           15.       The method of claim 1, wherein:

2           the first feedback includes an eviction rate indicator to indicate a rate at which code has  
3           been evicted from the compiled code cache during execution of the program.

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1           16.       The method of claim 1, wherein:

2           the first feedback includes a compilation rate indicator to indicate a rate at which code  
3           has been compiled by a just-in-time compiler during execution of the program.

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1           17.       The method of claim 1, wherein:

2           the second feedback includes a garbage collection rate indicator to indicate a rate at  
3           which unneeded information has been discarded from the heap during execution of the  
4           program.

1       18.       The method of claim 1, wherein:

2               the second feedback includes an object increase indicator to indicate whether live code  
3               remaining in the heap after garbage collection has increased during execution of the program.

1       19.       An article comprising:

2               a machine-readable storage medium having a plurality of machine accessible instructions,  
3               which if executed by a machine, cause the machine to perform operations comprising:

4               making a first determination, based on first feedback generated during execution of a  
5               program, the first determination to indicate whether the size of a compiled code cache  
6               should be modified;

7               making a second determination, based on second feedback generated during  
8               execution of the program, the second determination to indicate whether the size of a heap  
9               should be modified; and

10               modifying a shared storage region based on the first determination and the second  
11               determination.

1       20.       The article of claim 19, wherein the instructions that cause the machine to modify  
2               a shared storage region based on the first determination and the second determination further  
3               comprise instructions that cause the machine to:  
4               increase the size of the shared storage region if:

5                   the first determination indicates that the size of the compiled code cache should be  
6                   increased; and

7                   the second determination indicates that the size of the heap should be increased.

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2           21.       The article of claim 19, wherein the instructions that cause the machine to modify  
3           a shared storage region based on the first determination and the second determination further  
4           comprise instructions that cause the machine to:

5                   decrease the size of the shared storage region if:

6                   the first determination indicates that the size of the compiled code cache should be  
7                   decreased; and

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2                   the second determination indicates that the size of the heap should be decreased.

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2           22.       The article of claim 19, wherein the instructions that cause the machine to modify  
3           a shared storage region based on the first determination and the second determination further  
4           comprise instructions that cause the machine to:

5                   modify, if the second determination indicates that the size of the heap should be  
6                   increased, allocation of the shared storage region to increase the size of the heap.

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2           23.       The article of claim 22, wherein the instructions that cause the machine to modify  
3           a shared storage region based on the first determination and the second determination further  
4           comprise instructions that cause the machine to:

4                   modify, if the second determination indicates that the size of the heap should be  
5                   increased, allocation of the shared storage region to decrease the size of the compiled  
6                   code cache.

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2           24.       The article of claim 19, wherein the instructions that cause the machine to modify  
3           a shared storage region based on the first determination and the second determination further  
4           comprise instructions that cause the machine to:

5                   modify allocation of the shared storage region to increase the size of the heap if:  
6                   the second determination indicates that the size of the heap should be increased;  
7                   and  
8                   a growth need for the heap has existed for at least a predetermined time interval.

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2           25.       The article of claim 19, wherein the instructions that cause the machine to modify  
3           a shared storage region based on the first determination and the second determination further  
4           comprise instructions that cause the machine to:

5                   modify, if the first determination indicates that the size of the compiled code cache  
6                   should be increased, allocation of the shared storage region to increase the size of the  
7                   compiled code cache.

1       26.       The article of claim 25, wherein the instructions that cause the machine to modify  
2       a shared storage region based on the first determination and the second determination further  
3       comprise instructions that cause the machine to:

4               modify, if the first determination indicates that the size of the compiled code  
5       cache should be increased, allocation of the shared storage region to decrease the size of  
6       the heap.

1       1       27.       The article of claim 19, wherein the instructions that cause the machine to modify  
2       a shared storage region based on the first determination and the second determination further  
3       comprise instructions that cause the machine to:

4               modify, if the second determination indicates that the size of the heap should be  
5       decreased, allocation of the shared storage region to decrease the size of the heap.

1       1       28.       The article of claim 27, wherein the instructions that cause the machine to modify  
2       a shared storage region based on the first determination and the second determination further  
3       comprise instructions that cause the machine to:

4               modify, if the second determination indicates that the size of the heap should be  
5       decreased, allocation of the shared storage region to increase the size of the compiled  
6       code cache.

1       29.       The article of claim 19, wherein the instructions that cause the machine to modify  
2       a shared storage region based on the first determination and the second determination further  
3       comprise instructions that cause the machine to:

4               modify allocation of the shared storage region to increase the size of the compiled  
5       code cache if:

6               the first determination indicates that the size of the compiled code cache should  
7       be increased; and

8               a growth need for the compiled code cache has existed for at least a  
9       predetermined time interval.

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1       30.       The article of claim 19, wherein the instructions that cause the machine to modify  
2       a shared storage region based on the first determination and the second determination further  
3       comprise instructions that cause the machine to:

4               modify allocation of the shared storage region to decrease the size of the compiled  
5       code cache if the first determination indicates that the size of the compiled code cache  
6       should be decreased.

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1       31.       The article of claim 30, wherein the instructions that cause the machine to modify  
2       a shared storage region based on the first determination and the second determination further  
3       comprise instructions that cause the machine to:

4                   modify allocation of the shared storage region to increase the size of the heap if the  
5                   first determination indicates that the size of the compiled code cache should be decreased.

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1           32.       The article of claim 19, wherein:

2                   the first feedback includes a code increase indicator to indicate whether the amount of  
3                   compiled code in the compiled code cache has increased during execution of the program.

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1           33.       The article of claim 19, wherein:

2                   the first feedback includes an eviction rate indicator to indicate a rate at which code has  
3                   been evicted from the compiled code cache during execution of the program.

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1           34.       The article of claim 19, wherein:

2                   the first feedback includes a compilation rate indicator to indicate a rate at which code  
3                   has been compiled by a just-in-time compiler during execution of the program.

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1           35.       The article of claim 19, wherein:

2                   the second feedback includes a garbage collection rate indicator to indicate a rate at  
3                   which unneeded information has been discarded from the heap during execution of the  
4                   program.

1       36.       The article of claim 19, wherein:

2               the second feedback includes an object increase indicator to indicate whether live code  
3               remaining in the heap after garbage collection has increased during execution of the program.

1       37.       An apparatus, comprising:

2               a shared storage area, the shared storage area including a heap to store live objects and  
3               also including a compiled code cache; and  
4               a runtime manager to dynamically modify allocation of the shared storage area between  
5               the heap and the compiled code cache.

1       38.       The apparatus of claim 37, wherein:

2               the runtime storage manager is further to dynamically modify the allocation based on  
3               feedback generated during execution of a software program.

1       39.       The apparatus of claim 38, wherein:

2               the runtime storage manager is further to determine, based on the feedback, whether the  
3               size of the heap should be modified.

1       40.       The apparatus of claim 38, wherein:

2           the runtime storage manager is further to determine, based on the feedback, whether the  
3       size of the compiled code cache should be modified.

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1       41.       The apparatus of claim 40, wherein:

2           the runtime storage manager is to further determine, based on the feedback, whether the  
3       size of the compiled code cache should be increased.

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1       42.       The apparatus of claim 40, wherein:

2           the runtime storage manager is to further determine, based on the feedback, whether the  
3       size of the compiled code cache should be decreased.

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1       43.       The apparatus of claim 39, wherein:

2           the runtime storage manager is to further determine, based on the feedback, whether the  
3       size of the heap should be increased.

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1       44.       The apparatus of claim 39, wherein:

2           the runtime storage manager is to further determine, based on the feedback, whether the  
3       size of the heap should be decreased.